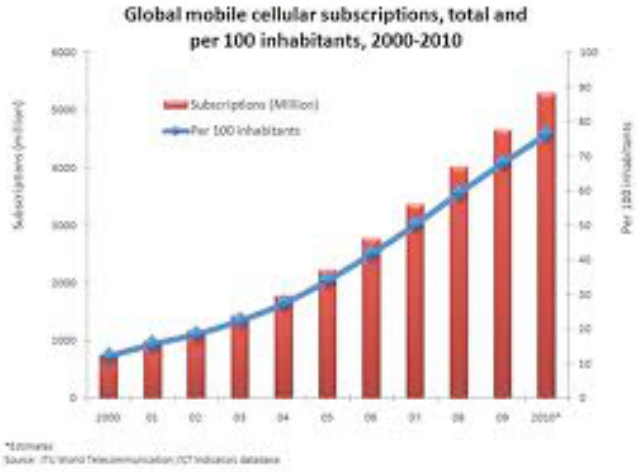
# *Are Cell Phones Dangerous to our Health?*

***Book review of "Disconnect" by Devra Davis***


Global mobile cellular subscriptions, total and per 100 inhabitants, 2000-2010
Subscriptions (Million)
Per 100 inhabitants

It may come as a surprise to today's teen agers, but just 20 years ago cell phones were a rarity. And now? As of 2010, there were over five billion cell phone subscribers world wide and one financial consultant has written, "Mobile today is by a wide margin, the fastest-growing giant industry on the planet."[1]

In the mad rush to cash in on this growth industry, the possible damage to health has been covered up. And this is really criminal because some simple, easy steps can be taken to at least lessen the dangers. (See end of this article.)

"Disconnect" by Devra Davis documents both the dangers as well as the cover-up by the industry.

Basically, cell phones emit a type of radiation known as non-ionizing radiation. This means the radiation isn't powerful enough to remove electrons from an atom; it can only excite the electrons. The radiation emitted by a cell phone is the same frequency and wave length as that inside a micro-wave oven, except that it is a lot less powerful. Therefore, the assumption by the regulators is that this radio frequency radiation (called radio frequency "energy" by the industry so as not to arouse concern) can only damage by causing heat. Davis cites study after study that disproves this assumption.

- Studies on rats show that the same radio frequency radiation (rfr) as emitted by cell phones can break up the DNA in the brain cells of rats and is associated with the formation of free radicals within the DNA. (Free radicals in the body are associated with cancer.)
- Another study showed rfr's are associated with the weakening of the brain/blood barrier and the leaking of fluid in the brain into the blood stream.
- Studies have shown that from rats to children, exposure to cell phone radiation can affect learning ability and ability to retain information.
- Studies have shown that cell phone radiation can weaken the male sperm.
- There is plenty of anecdotal evidence of brain cancer associated with high and prolonged cell phone usage. This includes the fact that the country in which cell phone usage is highest – Israel – has also seen the highest rate of increase in brain cancer.

**Scientific Studies**

Then there is the experience of scientists who studied the issue. Take Franz Adlekofer, who received a multi million euro grant in 2000 from the European Union to conduct a study in his privately owned REFLEX laboratories. He commented: "What little I knew about it (before he started) told me it had to be safe.... Our a priori opinion was that we would find no health effects at all from radio frequency radiation." But what did he find? "We ran the work again and again, exposing the cells to RF (radio frequency) and looking inside at their DNA. And again we found the very same effects. The DNA from the exposed cells looked sick. We saw an increase in DNA strand breaks... We were astonished." He also found that the effects were ten times higher from 3G phones than from 2G's.

Or take Dr. Lennert Hardell, an expert in field in Sweden: "In my studies I find one pattern over and over again. Those who have used their phones the most and for the longest, have more malignant brain tumors

1 http://consultantvalueadded.com/2011/03/07/mobile-as-a-trillion-dollar-industry-check-this/

than others."

**Cell Phone Industry Response**

The response of the industry has been something that might rival the cloak-and-dagger maneuvers of a James Bond movie. In the case of Adlekofer, a research assistant named "Elisabeth" supposedly came forward and said the results were faked. Adlekofer, who had worked with her for years tried to get in touch with her but she had disappeared. Over a year later, he did get in touch with her and she denied having ever said it and, in fact, several independent bodies checked Adlekofer's statistics and found they were accurate. Meanwhile, a Professor Alexander Lerchl from the private Jacobs University in Bremen sent a letter denouncing Adlekofer's research. Lerchl, however, failed to reveal that he had received over one million euros for five different rfr studies from cell phone industry and that his university has as a major funder Vodaphone foundation.

Research into the health effects of cell phone radiation has followed the pattern of similar research into the health effects of asbestos, tobacco smoking, etc. The industry uses its economic and political clout to stifle independent research.

- A paper written as early as 1997 by a researcher for Motorola, Jerry Phillips, showed cell damage. At the end of his paper, the following sentence appeared: "The damage is probably of no physiological consequence." Phillips did not write this and according to him, he was asked to include it by a Motorola official. When he declined, it was added anyway.
- Om Ghandi was a similar researcher. Very highly thought of, he chaired the Institute for Electronics and Electrical Engineering and actually testified as an expert defense witness for Motorola in one of the earliest law suits against the industry. His subsequent research showed cell damage and he lost his positions and his funding. "Now there is no money for independent research at all," he says.

**Industry Studies**

There have been some studies that claim to show no harm from cell phone usage. One of the best known was conducted in Denmark in 2006. In that study, the looked at the health records of "private users" of cell phones - meaning those who used cell phones for private vs. business use – between the years 1982 and 1985 and then looked at their health records through the year 2002. They found no significant difference between cell phone users and non-cell phone users. Davis shows the flaws in that study: *"Why did they not look at business users – those with far more frequent use of cell phones? Why lump all users together, putting those who might have made a single cell phone call a week with those who used the phones more often? Why stop collecting information on brain tumors in 2002? Use of cell phones has grown more than fourfold since then in many countries."* In addition, as Adlekofer has shown, the more recent 3G phone (and presumably the even more recent 4G) have a greater impact.

The response of the industry – denial, defunding, constantly calling for "more studies" - is similar to big business response to other health or environmental threats – from the effects of tobacco smoke to global warming/global climate disruption. In the case of cell phones, it is obvious that they are not going away.

**Safety Measures**

However, research into how they could be made safer by shielding their antennas, for instance, is put on the back burner if it's conducted at all. That is because the industry doesn't want people to worry about possible health threats. Better to let them risk dying than lose profits. Even as it is, however, there are some very simple steps that people can take to lessen the threats. These include:

- **Use the speaker phone or a head set.** *The strength of the rfr's decreases more than exponentially with just the slightest distance between the ear and the phone. As far as a wireless (bluetooth) head set – blue tooth rays are far weaker than are the rfr's of the phone itself.*
- **As much as possible, avoid using the phone in the car or any similar metal-enclosed area (like the elevator).** *The metal enclosure acts to bounce the cell phone radiation off of it. If you must use it regularly in a car, try to get an exterior antenna for the car to connect up to your phone.*
- **Do not carry the phone right next to your body.** *Some women, for instance, when they go jogging put the phone inside their sports bra. Unusual cancers, forming in an unusual location on the outside of the breast, right where they keep their cell phone have been found in women recently. Also, don't carry your*

*phone in your pocket. A holder outside the clothes is better and in a separate bag (purse, etc.) is even better.*

- **Pregnant Women: Don't carry your cell phone next to the body.** *Duh!*
- **Men, keep your cell phone as far from your genitals as possible, especially if you are trying to make a baby.** *Studies show the rfr's damage sperm cells.*
- **Don't carry the phone with the antenna facing you.** *If you absolutely must keep it in your pocket, be sure to have the screen of the phone facing you since it is the antenna that emits the rfr's..*
- **Texting is better than talking.** *As a member of the older generation, I have a prejudice against text messaging, but it turns out that texting creates weaker rfr's than does talking. But, students: If you text during class, and you have to hide the phone in your lap, especially for boys this could be harmful! So if you're doing so, then at least rest it on a book to shield your body from the phone!*
- **Don't charge your cell phone by your head at night.** *There is some thought that cell phone rfr's disturb sleep, and anyway, why not get away from the rays at least while you sleep? Do you use your cell phone for an alarm clock? Come on, people! Do you remember those things called an alarm clock?*
- **Do not – *Do Not* – let children under the age of 14 or 15 or so use a cell phone regularly!** *This is a really big one. A child's brain and their skull are still developing and the rfr's affect a child's brain more. Also, since the skull provides some degree of shielding, it is even more unsafe for them to use a cell phone.*

There is a tendency to ignore any danger that we can't feel, hear, see or smell. But there is enough evidence that rfr's from cell phones are dangerous that every precaution possible should be taken when using one. And don't overuse it. The life you preserve might be your own.

John Reimann